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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,034	07/10/2003	Kyung-Hun Jang	249/391	9810

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EXAMINER

RICHMOND, LEAH L

ART UNIT PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/616,034

Applicant(s)

JANG ET AL.

Examiner

Leah L. Richmond

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 - 11 is/are allowed.
- 6) ☒ Claim(s) 1 - 5 and 12 - 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :01/06/2004, 04/30/2004, 07/13/2005.

DETAILED ACTION

Foreign Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on January 6, 2004, April 30, 2004 and July 13, 2005 were filed after the mailing date of the Application on July 10, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 14 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Consider **claim 14**, the "computer readable medium," in accordance with Applicant's specification, may be an electromagnetic signal (paragraph [0079]. This subject matter is not limited to that which falls within a statutory category of invention

because it is not limited to a process, machine, manufacture, or a composition of matter. Instead, it may include a form of energy. Energy does not fall within a statutory category since it is clearly not a series of steps or acts to constitute a process, not a mechanical device or combination of mechanical devices to constitute a machine, not a tangible physical article or object which is some form of matter to be a product and constitute a manufacture, and not a composition of two or more substances to constitute a composition of matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

A person shall be entitled to a patent unless -- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by **Fukushima et al. (U.S. Patent # 6732313)**.

Consider **Claim 15**, Fukushima et al. clearly show and disclose a selective retransmission apparatus that includes a frame detector, a transmission error detector and a retransmission function unit that transmits a retransmission message and a sequence number of a non-received packet according to a detection result from the frame detector and receives the packets through retransmission (Col. 17, lines 37 – 43: “In this first embodiment, each packet may be given the frame type, such as I frame, P frame, and B frame, as the additional information, instead of the priority. Further, there

are various methods for deciding the packet priority. For example, in the case of a video signal based on the MPEG standard, packets corresponding to I frames may be decided as high priority packets.” and Fig. 2 and Col. 15, lines 53 - 58: “The error packet detection unit 22 detects error packets in which errors have occurred during transmission, and outputs normal packets which have been transmitted without transmission errors. The packet decoding unit 23 receives the normal packets and decodes the coded data of the normal packets.” and Col 15, line 63 - Col. 16, line 3: “The packet priority decision unit 25 receives the result of the detection in the error packet detection unit 22 and decides an error packet the priority of which is equal to or higher than a predetermined value. The retransmission instruction output unit 26 outputs a request for retransmitting the error packet which has been decided in the packet priority decision unit 25, toward the transmitting end, by indicating the sequence number of the error packet.” and Col. 16, lines 57 – 59: “In this way, the packets from the distribution server are successively transmitted to the terminal (data receiving apparatus) 201 ...”).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Aimoto (U.S. Patent # 6967924)** in view of **Shoemake et al. (2004/0203815)**.

Consider **claims 1 and 14**, Aimoto clearly shows and discloses a computer readable medium (inherently taught) and a method for generating packet-based transmission control parameters, comprising: (a) receiving class information of an application and characteristic information of a packet, from the application and generating and outputting the packet-based transmission control parameters on the

bases of the received information. (Fig. 2C and Col. 6, lines 20 - 25: "The connection information 230 includes destination address information 232 for specifying a destination terminal, traffic class information 234, sub-class information 236 for indicating a priority relative to cell discard, and terminal protocol information 238 indicative of an upper rank protocol at the source terminal." and lines 39 - 46: "The call control unit 140 sets the output VCI 226 allocated to a call, output port information 222 specified by the destination address, and a traffic class 234 and a traffic sub-class 236 extracted from the connection information 230 to a conversion table ... of the header conversion circuit 132 connected to the source terminal in a call setup sequence executed in response to the connection information."). Aimoto does not disclose that the application is an audio-video application and receiving status information of a wireless channel and buffer storage time information of the packet from a medium access control (MAC) layer. However, Shoemake et al. clearly show and disclose an audio-video application and receiving wireless channel status information and buffer storage time information (Col. 7, paragraph [0055]: "As described above, these parameters describe such QoS requirements as jitter, time delay limits, and bandwidth requirements. Additional QoS requirements may also be included in these parameters, for example including an upper limit on bit error rate and the like. Smart router 12 ... receives or has received, in process 56, information regarding these available wireless communications channels, specifically relating the QoS parameters." And Col. 9, paragraphs [0078] and [0079]: "... one synchronization approach can be to include some amount of buffer memory at the receiving device, to buffer the lower latency

signals ... for later synchronization with the higher latency component ... In the streaming context, the control track controls the playing device to read the buffered lower-latency content in a synchronized manner with the higher latency content; if the higher-latency content is delayed beyond the capacity of the buffer, techniques such as freezing the video frame while continuing audio output can be applied.”). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate receiving wireless channel status information and buffer storage time information as taught by Shoemake et al. in the method for generating packet-based transmission control parameters as in Aimoto for the purpose of including channel status and buffer storage time in the transmission control parameters.

Consider **claim 2**, and as applied to claim 1, Aimoto as modified by Shoemake et al. clearly shows and discloses a method wherein the class information of the application and the characteristic information of the packet represent characteristics of the packet and are contained in an identifier of the packet (Fig. 2A and Col. 5, lines 58-59: “Each cell 210 includes a header portion and a data portion 212...” and Fig. 2C and Col. 6, lines 5-10: “Added to a header portion of the internal cell 220 are an output VCI 221 for replacing the input VCI 216 of the input cell 210, routing information ... 222, a traffic class 224, a sub-class 225, and a packet discard status information 228 ...”).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Aimoto (U.S. Patent # 6967924)** in view of **Shoemake et al. (2004/0203815)** as applied to claim 1 above, and further in view of **Dougall et al. (U.S. Patent Application**

Publication # 2003/0093485 A1) and further in view of **Fukushima et al. (U.S. Patent # 6732313).**

Consider **claim 3**, and as applied to claim 1, Aimoto in view of Shoemake et al. do not disclose a method wherein the transmission control parameters include information from the group consisting of maximum allowable buffer storage time, maximum relative transmission time difference, priority level, retransmission information and importance information. However, Dougall et al. clearly shows and discloses a method wherein the transmission control parameters include the maximum allowable buffer storage time (Col. 8, paragraph [0098]: "Furthermore, the operator can specify the amount of information to buffer for retransmission in response to messages indicating that one or more clients did not receive the original communication of data on this channel." and "This in turn increases or decreases respectively the "Time Buffered" value. The time buffered value indicates how many seconds of transmittable data is buffered, and the amount of buffered data is equal to this time value multiplied by the bandwidth."). Dougall et al. do not disclose transmission control parameters that include priority level information. However, Fukushima et al. clearly shows and discloses transmission control parameters that include priority level information (Col. 15, lines 5 – 8: "To be specific, the header section of each packet contains additional information relating to its sequence number, priority, and data reproduction time at the receiving end."). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the priority level information as taught by Fukushima et al. and the maximum allowable buffer storage time information

as taught by Dougall et al. in the transmission control parameters of the method in Aimoto in view of Shoemake et al. for the purpose of using priority information and maximum allowable buffer storage time information as transmission control parameters in the method for generating packet-based transmission control parameters.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Zheng et al. ("A Novel Scheme for Streaming Multimedia to Personal Wireless Handheld Devices")** in view of **Fukushima et al. (U.S. Patent # 6732313)**.

Consider **claim 4**, Zheng et al. clearly shows and discloses a selective retransmission method, comprising transmitting packets of an MPEG frame in real-time, checking for any transmission error after the transmission, and retransmitting only packets belonging to a certain type of frame (II. System Model and Proposed Retransmission Scheme, paragraph 2: "MPEG compressed video consists of I, P and B frames. The frames are grouped to form a special structure called Group of Picture (GoP). Each GoP includes an I frame followed by a number of P and B frames. ... I frame is the most important, while the B frame is the least important. ... we propose the following retransmission scheme based on errors in the received video stream ... If the number of errored packets in an I frame is higher than an acceptable error threshold for the I frame, the packets belonging to the I frame are discarded, and the I frame is retransmitted from the multimedia server; If the number of errored packets in a P frame is higher than the acceptable error threshold for the P frame, the P frame is discarded and is retransmitted; Errored packets in B frames are discarded and are not

retransmitted.”). Zheng et al. does not disclose retransmitting only packets of an I frame. However, Fukuskima et al. clearly show and disclose only retransmitting packets that are defined to be at or above a given priority level (Col. 17, lines 37 – 43: “... each packet may be given the frame type, such as I frame, P frame, and B frame, as the additional information, instead of the priority. Further, there are various methods for deciding the packet priority. For example, in the case of a video signal based on the MPEG standard, packets corresponding to I frames may be decided as high priority packets.” and Col. 17, lines 30 – 33: “With respect to error packets affected by transmission errors, only those having priorities equal to or higher than a predetermined value are retransmitted.”). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to retransmit only packets whose priority level is at or above a given level, such as the packets belonging to an I frame, as taught by Fukushima et al., in the selective retransmission method of Zheng et al. for the purpose of reducing traffic and taking less time to recover from transmission errors.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Zheng et al. (“A Novel Scheme for Streaming Multimedia to Personal Wireless Handheld Devices”)** in view of **Fukushima et al. (U.S. Patent # 6732313)** as applied to claim 4 above, and further in view of **Chen et al. (U.S. Patent # 6658019)**.

Consider **claim 5**, and as applied to claim 4, Zheng et al. in view of Fukushima et al. do not disclose transmitting I frame packets in an ARQ interval and transmitting

packets that are not I frame packets in a non-ARQ interval. However, Chen et al. clearly show and disclose using an ARQ scheme for packets with higher priority and no ARQ scheme for packets with lower priority (Fig. 1 and Col. 2, lines 32 – 36: “The multi-ARQ step S4 is based on the concept of unequal error protection, wherein video data with different sensitivities are provided with automatic repeat request (ARQ) schemes with different reliabilities or no ARQ scheme.” and Col. 3, lines 4 – 5: “medium sensitive data: the DCT coefficients of I-frames...” and Col. 3, lines 18 – 25: “For medium sensitive data, a low reliable burst-oriented transfer with time-bounded retransmission ARQ (BTTR-ARQ) scheme is applied thereon to protect data against transmission errors. ... For low sensitive data, since the corrupted data packets of such low sensitive data will result in less visual distortion, no ARQ scheme is applied thereon ...”).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use an ARQ scheme for packets having higher priority and no ARQ scheme for packets having lower priority, as taught by Chen et al., in the selective retransmission method as in Zheng et al. in view of Fukushima et al. for the purpose of providing different levels of error protection for packets having different priority levels.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al. (U.S. Patent # 6658019)** in view of **Budagavi (U.S. Patent Application Publication # 2006/0130104 A1)** and further in view of **Fukushima et al. (U.S. Patent # 6732313)** and further in view of **Johansson et al. (WO 00/33503)**.

Consider **claim 12**, Chen et al. clearly show and disclose a selective retransmission method comprising initializing a selective ARQ operation mode, estimating transmission time of all highly important packets, and allotting extra time for retransmission of highly important packets (Fig. 1 and Col. 2, lines 32 – 36: “The multi-ARQ step S4 is based on the concept of unequal error protection, wherein video data with different sensitivities are provided with automatic repeat request (ARQ) schemes with different reliabilities or no ARQ scheme.” and Col. 3, lines 28 - 37: “To meet the real-time requirement of video transmission, all transmitted packets should be received within the maximum acceptable latency time. To guarantee higher reliability for sensitive data, the number of retransmissions will increase. This introduces additional round-trip delay which could be unacceptable for high-speed networks or satellite links. To solve this problem, in the video stream rescheduling step S3, the transmitting time of high sensitive packets can be antedated to reserve an additional time period for possible retransmissions.” And lines 45- 47: “... since H1, H2 and H3 have highest sensitivity, the time for starting transmission is advanced a first ahead time t_{A1} earlier than the original start time.” and lines 54 – 57: “Accordingly, data with higher sensitivity is substantially transmitted as early as possible so that sufficient time can be reserved for possible retransmission, whereby the real-time requirement is not affected by the retransmission.”). Chen et al. do not disclose allowing a receiver to prepare a retransmission buffer. However, Budagavi clearly shows and discloses preparing a buffer for use in ARQ mode (Col. 3, paragraph [0049]: “... the frame playout could include a large buffer and delay to allow from some automatic repeat request for I-frame

packets to supersede some repeat P-frame packets ..."). Budagavi also shows and discloses keeping track of I frame information such as average size in bits and number of packets (Col. 2, paragraphs [0015] and [0017]: "l₀ denote the average size of an I-frame expressed in bits. ... n_i denote the number of packets required for a single I-frame."). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the buffer for use in ARQ mode as taught by Budagavi in the selective retransmission method of Chen et al. for the purpose of using a retransmission buffer in the selective retransmission method. Chen et al. in view of Budagavi do not disclose analyzing sequence numbers of the received packets and including sequence numbers of packets not received in a retransmission request. However, Fukushima et al. clearly show and disclose determining the sequence numbers of packets that need to be retransmitted and including the sequence numbers in a retransmission request (Col 15, line 63 - Col. 16, line 3: "The packet priority decision unit 25 receives the result of the detection in the error packet detection unit 22 and decides an error packet the priority of which is equal to or higher than a predetermined value. The retransmission instruction output unit 26 outputs a request for retransmitting the error packet which has been decided in the packet priority decision unit 25, toward the transmitting end, by indicating the sequence number of the error packet."). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the sequence numbers in a retransmission request as taught by Fukushima et al. in the selective retransmission method as in Chen et al. in view of Budagavi for the purpose of using the packet

sequence numbers to identify the packets to be retransmitted in the retransmission request. Chen et al. in view of Budagavi and further in view of Fukushima et al. do not disclose using a timer for the ARQ mode. However, Johansson et al. clearly show and disclose setting a timer (page 3, lines 23 – 24: “A retransmit timer is started when the retransmission request is sent.” and page 4, lines 3 - 5: “When the timer indicates that the delay time period is over, a counter is started. Based on the counter’s value, a determination is made whether all of the data units requested to be retransmitted has been properly received.”). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the ARQ mode timer as taught by Johansson in the selective retransmission method of Chen et al., Budagavi, and Fukushima et al. for the purpose of determining how many packets have been received during a set period of time.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al. (U.S. Patent # 6658019)** in view of **Budagavi (U.S. Patent Application Publication # 2006/0130104 A1)** and further in view of **Fukushima et al. (U.S. Patent # 6732313)** and further in view of **Johansson et al. (WO 00/33503)** and further in view of **Persson et al. (U.S. Patent # 6144653)**.

Consider **claim 13**, and as applied to claim 12, Chen et al. in view of Budagavi, Fukushima et al. and Johansson et al. do not disclose terminating an automatic repeat request mode if no packet requires retransmission. However, Persson et al. clearly show and disclose terminating an ARQ mode if no packet requires retransmission (Col.

40, lines 49 and 61 – 63: “ARQ Mode Termination” “If the BMI receives an ARQ Status message and the FRNO MAP indicates “all correct”, the ARQ Mode transaction is considered to be successfully completed.”). Persson et al. do not disclose transmitting a retransmission message including no sequence numbers (NULL) before terminating the ARQ operation mode. However, transmitting a retransmission message including no sequence numbers (NULL) is an obvious variation of a status message that indicates “all correct”; in this case, the fact that there are no sequence numbers in the retransmission message indicates that all the sequence numbers were received correctly. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to transmit a retransmission message including no sequence numbers (NULL) and terminate the ARQ mode as taught by Persson et al. in the selective retransmission method of Chen et al., Budagavi, Fukushima et al. and Johansson et al. for the purpose of indicating that no packet requires retransmission and terminating the ARQ operation mode.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (U.S. Patent # 6732313)** in view of **Mead (U.S. Patent # 5708473)**.

Consider **claim 16**, and as applied to claim 15, Fukushima et al. do not disclose a frame detector that determines whether the frame is an I-frame, a B-frame or a P-frame of an MPEG-2 frame. However, Mead clearly shows and discloses a frame detector that determines whether the frame is an I-frame, a B-frame, or a P-frame of an MPEG-2 frame (Fig. 1 and Col. 5, lines 51 – 60: “One such set of information is formed

Art Unit: 2609

by identifying hard-to-code frames, or frames for which prediction fails, using the frame detector 26 ... When a hard-to-code frame occurs, the use of motion-compensated prediction results in both a large prediction error and a highly non-smooth motion vector field. Encoding blocks of P-frames and B-frames as intra blocks can be used to attenuate the effect of the large prediction error. In a preferred embodiment, however, a new group of frames beginning with an I-frame is formed at each hard-to-code frame.”). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a retransmission unit that only retransmits packets when the frame detector detects an I-frame as taught by Mead in the apparatus as in Fukushima et al. for the purpose of only retransmitting the highest priority packets.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Fukushima et al. (U.S. Patent # 6732313)**.

Consider **claim 17**, and as applied to claim 15, Fukushima et al. clearly show and disclose an apparatus wherein the retransmission function unit performs retransmission of packets only when the frame detector detects an I frame (Fig. 2 and Col. 17, lines 37 – 43: “In this first embodiment, each packet may be given the frame type, such as I frame, P frame, and B frame, as the additional information, instead of the priority. Further, there are various methods for deciding the packet priority. For example, in the case of a video signal based on the MPEG standard, packets corresponding to I frames may be decided as high priority packets.” and Col 15, line 63 - Col. 16, line 3: “The packet priority decision unit 25 receives the result of the detection

Art Unit: 2609

in the error packet detection unit 22 and decides an error packet the priority of which is equal to or higher than a predetermined value. The retransmission instruction output unit 26 outputs a request for retransmitting the error packet which has been decided in the packet priority decision unit 25, toward the transmitting end, by indicating the sequence number of the error packet.”). According to this description, this invention allows I frame packets to be designated high priority, and it also allows for retransmitting only high priority packets. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a retransmission function unit that only performs retransmission when the frame detector detects an I frame into the apparatus as in Fukushima et al. for the purpose of retransmitting only I frame packets to save time and bandwidth.

Allowable Subject Matter

Claims 6 - 11 are allowed.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window

Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Leah Richmond whose telephone number is (571) 270-1774. The Examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm Eastern Standard Time.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Perez-Gutierrez can be reached at (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Art Unit: 2609

Leah Richmond

L.L.R./llr

February 16, 2007


RAFAEL PEREZ-GUTIERREZ
SUPERVISORY PATENT EXAMINER
2/16/07